

REMARKS

Applicants appreciate the Examiner's thorough consideration provided the present application. Claims 13, 14 and 20-34 are now present in the application. Claims 13, 14 and 20-22 have been amended. Claims 25-34 have been added. Claims 1-12 and 15-19 have been withdrawn and hereby cancelled. Claims 13, 20 and 22 are independent. Reconsideration of this application, as amended, is respectfully requested.

Election/Restrictions Requirement

The Examiner has acknowledged Applicants' election of Species A, and has withdrawn claims 1-12 and 15-19 from further consideration. Applicants respectfully submit that claims 1-12 and 15-19 have been cancelled.

Information Disclosure Citation

Applicants thank the Examiner for considering the references supplied with the Information Disclosure Statement filed on February 22, 2005, September 22, 2005, and August 31, 2006, and for providing Applicants with an initialed copy of the PTO-1449 form filed therewith.

Drawings

The Examiner did not indicate whether or not the formal drawings have been accepted. Since no objection has been received, Applicants assume that the drawings are acceptable and

that no further action is necessary. Confirmation thereof in the next Office Action is respectfully requested.

Claim Rejections Under 35 U.S.C. §§ 102 & 103

Claims 13, 14 and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Nakayama, JP 01095294. Claims 20 and 21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Haussmann, U.S. Patent No. 4,923,002. Claim 24 stands rejected under 35 U.S.C. § 102(b) as being anticipated by or under 35 U.S.C. § 103(a) as being unpatentable over Nakayama. Claim 23 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakayama in view of Haussmann. These rejections are respectfully traversed.

Complete discussions of the Examiner's rejections are set forth in the Office Action, and are not being repeated here.

In light of the foregoing amendments to the claims, Applicants respectfully submit that these rejections have been obviated and/or rendered moot. Without conceding to the propriety of the Examiner's rejections, but merely to timely advance the prosecution of the application, as the Examiner will note, independent claims 13, 20 and 22 have been amended.

Claim 13

Independent claim 13 now recites a combination of elements including "a plurality of peak and valley portions alternately disposed in a first direction at an area defined between the tubes, the peak portions and the valley portions extending along a second direction, the peak portions being non-coplanar and the valley portions being substantially coplanar, an interior

angle of each of two immediately adjacent peak portions centermost to the corresponding one of the fin collars being different from an interior angle of each of the other peak portions immediately adjacent to the two immediately adjacent peak portions centermost to the corresponding one of the fin collars.” Support for the above combination of elements set forth in amended claim 13 can be found in FIGs. 6-8 as originally filed.

Nakayama discloses a heat exchanger including a fin 11 with a plurality of peak portions (not labeled) having the same height and valley portions (13 and non-labeled valley portions) with different heights (see FIG. 2). As shown in FIG. 2 of Nakayama, the heights of the peak portions are the same and the valley portions are non-coplanar. Therefore, Nakayama fails to teach “the peak portions being non-coplanar and the valley portions being substantially coplanar” as recited in amended claim 13.

With regard to Haussmann, as shown in FIGs. 1-5 of Haussmann, all of the peak portions 5 are coplanar and all of the valley portions 11 are coplanar. Therefore, Haussmann also fails to cure the deficiencies of Nakayama in this aspect of amended claim 13.

In addition, as shown in FIG. 2 of Nakayama, although it is not explicitly disclosed, the valley portion 13 seems to be located along the center of the fin collar, and the peak portions immediately adjacent to the valley portion 13 are symmetrical with respect to the valley portion 13. In other words, the interior angles of the peak portions are the same because the peak portions immediately adjacent to the valley portion 13 are symmetrical with respect to the valley portion 13. Therefore, Nakayama fails to teach “an interior angle of each of two immediately adjacent peak portions centermost to the corresponding one of the fin collars being different from an interior angle of each of the other peak portions immediately adjacent to the two immediately

adjacent peak portions centermost to the corresponding one of the fin collars” as recited in amended claim 13.

With regard to Haussmann, since all of the peak portions 5 are coplanar and all of the valley portions 11 are coplanar, and the distance between the peak portions 5 and valley portions 11 are equal, the interior angles of the peak portions 5 are the same. Therefore, Haussmann also fails to cure the deficiencies of Nakayama in this aspect of amended claim 13.

Claim 22

Independent claim 22 now recites a combination of elements including “a plurality of peak and valley portions that are alternately disposed in a first direction at an area defined between the tubes, the peak portions and the valley portions extending along a second direction, two immediately adjacent peak portions centermost to a corresponding one of the fin collars being substantially coplanar and having a height different from the other peak portions immediately adjacent to the two immediately adjacent peak portions centermost to the corresponding one of the fin collars.” Support for the above combination of elements set forth in amended claim 22 can be found in FIGs. 6-8 as originally filed.

As mentioned, as shown in FIG. 2 of Nakayama, the heights of the peak portions are the same. Therefore, Nakayama fails to teach “two immediately adjacent peak portions centermost to a corresponding one of the fin collar ... having a height different from the other peak portions immediately adjacent to the two immediately adjacent peak portions centermost to the corresponding one of the fin collars” as recited in amended claim 22.

With regard to Hausmann, as mentioned, all of the peak portions 5 are coplanar and all of the valley portions 11 are coplanar. Therefore, Hausmann also fails to cure the deficiencies of Nakayama in this aspect of amended claim 22.

Claim 20

Independent claim 20 now recites a combination of elements including “a plurality of peak and valley portions alternately disposed in a first direction at an area defined between the tubes, the peak portions and the valley portions extending along a second direction, one of the valley portions being located between two immediately adjacent peak portions centermost to the corresponding one of the fin collars” and “a plurality of inclined portions extending from an outer circumference of a corresponding one of the seats to at least two of the peak portions, each of the two of the peak portions being respectively immediately adjacent to the two immediately adjacent peak portions centermost to the corresponding one of the fin collars.” Support for the above combination of elements set forth in amended claim 20 can be found in FIGs. 6-8 as originally filed.

As shown in FIG. 4 of Hausmann, each of the combination of the sleeves 4 and the corresponding troughs 3 only extends through an area covered by two peak portions 5 and two valley portions 11. In addition, each sleeve 4 has three inclined portions. Taking the sleeve 4 at the lower-right corner in FIG. 4 of Hausmann as an example, there are a first inclined portion (the upper one) extending from the trough 33 (seemed to be referred to by the Examiner as the seat) to the right one of the two peak portions 5 centermost to sleeve 4, a second inclined portion (the lower one) extending from the trough 33 to the same right one of the two peak portions 5

centermost to sleeve 4, and a third inclined portion (the middle-left one) extending from the trough 33 to the left one of the two peak portions 5 centermost to sleeve 4. However, the sleeve 4 at the lower-right corner in FIG. 4 of Haussmann does not have any corresponding inclined portion extending from the corresponding trough 3 to the peak portion immediately adjacent to the two immediately adjacent peak portions 5 centermost to the sleeve 4. Therefore, Haussmann fails to teach “a plurality of inclined portions extending from an outer circumference of a corresponding one of the seats to at least two of the peak portions, each of the two of the peak portions being respectively immediately adjacent to the two immediately adjacent peak portions centermost to the corresponding one of the fin collars” as recited in amended claim 20.

As shown in FIG. 1 and 6 of Nakayama, it is unclear whether there is any inclined portion extending from the seat. However, since each of the combination of the collars 12 and the corresponding seats (not labeled) only extends within an area covered by two peak portions 5 and three valley portions 11, it is clear that there is no inclined portion extending from the corresponding seat to the peak portion immediately adjacent to the two immediately adjacent peak portions centermost to the corresponding collar 12. Therefore, Nakayama also fails to teach “a plurality of inclined portions extending from an outer circumference of a corresponding one of the seats to at least two of the peak portions, each of the two of the peak portions being respectively immediately adjacent to the two immediately adjacent peak portions centermost to the corresponding one of the fin collars” as recited in amended claim 20.

Accordingly, neither of the utilized references individually or in combination teach or suggest the limitations of amended independent claims 13, 20 and 22. Therefore, Applicants

respectfully submit that amended independent claims 13, 20 and 22 clearly define over the teachings of the utilized references.

In addition, claims 14, 21, 23 and 24 depend, either directly or indirectly, from independent claims 13, 20 and 22, and are therefore allowable based on their respective dependence from independent claims 13, 20 and 22, which are believed to be allowable.

In view of the above remarks, Applicants respectfully submit that claims 13, 14 and 20-24 clearly define the present invention over the references relied on by the Examiner. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §§ 102 and 103 are respectfully requested.

Additional Claims

Additional claims 25-34 directed to the elected species have been added for the Examiner's consideration. Support for dependent claims 25-34 can be found in FIGs. 6-8 as originally filed.

Applicants respectfully submit that claims 25-34 are allowable due to their respective dependence on independent claims 13, 20 and 22, as well as due to the additional recitations included in these claims.

Favorable consideration and allowance of additional claims 25-34 are respectfully requested.

Additional Cited References

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but rather to merely show the state of the art, no further comments are necessary with respect thereto.

CONCLUSION

All the stated grounds of rejection have been properly traversed and/or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently pending rejections and that they be withdrawn.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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